

What is claimed is:

Sub  
al

1. A ~~display apparatus~~ for displaying a color image by controlling the number of emissions or the intensity thereof in accordance with primary color video signals input thereto, comprising:

5 a detection portion detecting said number of emissions or said intensity; and

a white balance correction portion correcting white balance by adjusting the amplitudes of said primary color video signals in accordance with said detected number of emissions or said detected intensity.

10 2. The display apparatus as claimed in claim 1, wherein said detection portion detects said number of emissions or said intensity from a display ratio of an image produced by said primary color video signals.

15 3. The display apparatus as claimed in claim 2, further comprising a control portion controlling the number of emissions for, or the intensities of, said primary color video signals in accordance with said display ratio of said image.

20 4. The display apparatus as claimed in claim 3, wherein said white balance correction portion comprises a computing unit and a plurality of multipliers wherein said computing unit computes amplitude coefficients for said primary color video signals in accordance with said display ratio of said image, and said multipliers multiply said primary color video signals respectively by said computed amplitude coefficients.

25 5. The display apparatus as claimed in claim 3, wherein said white balance correction portion comprises a storage unit and a plurality of multipliers wherein said storage unit outputs amplitude coefficients for said primary color video signals in accordance with said display ratio of said image, and said multipliers multiply said primary color video signals respectively by said amplitude coefficients output from said storage unit.

30

35

0972661-11800

6. The display apparatus as claimed in claim 3,  
wherein said white balance correction portion comprises a  
storage unit wherein said storage unit outputs amplitude-  
adjusted primary color video signals in accordance with  
5 said primary color video signals and said display ratio  
of said image.

7. The display apparatus as claimed in claim 1,  
wherein said detection portion detects said number of  
emissions or said intensity from a display current that  
10 flows when displaying an image in accordance with said  
primary color video signals.

8. The display apparatus as claimed in claim 7,  
further comprising a control portion controlling the  
number of emissions for, or the intensities of, said  
15 primary color video signals in accordance with said image  
display current.

9. The display apparatus as claimed in claim 8,  
wherein said white balance correction portion comprises a  
computing unit and a plurality of multipliers wherein  
20 said computing unit computes amplitude coefficients for  
said primary color video signals in accordance with said  
image display current, and said multipliers multiply said  
primary color video signals respectively by said computed  
amplitude coefficients.

25 10. The display apparatus as claimed in claim 8,  
wherein said white balance correction portion comprises a  
storage unit and a plurality of multipliers wherein said  
storage unit outputs amplitude coefficients for said  
primary color video signals in accordance with said image  
30 display current, and said multipliers multiply said  
primary color video signals respectively by said  
amplitude coefficients output from said storage unit.

11. The display apparatus as claimed in claim 8,  
wherein said white balance correction portion comprises a  
35 storage unit wherein said storage unit outputs amplitude-  
adjusted primary color video signals in accordance with  
said primary color video signals and said image display

00337 12300

current.

12. The display apparatus as claimed in claim 1,  
wherein said detection portion detects said number of  
emissions or said intensity from an external applied  
luminance-adjusting input.

13. The display apparatus as claimed in claim 12,  
further comprising a control portion controlling the  
number of emissions for, or the intensities of, said  
primary color video signals in accordance with said  
externally applied luminance-adjusting input.

14. The display apparatus as claimed in claim 13,  
wherein said white balance correction portion comprises a  
computing unit and a plurality of multipliers wherein  
said computing unit computes amplitude coefficients for  
said primary color video signals in accordance with said  
externally applied luminance-adjusting input, and said  
multipliers multiply said primary color video signals  
respectively by said computed amplitude coefficients.

15. The display apparatus as claimed in claim 13,  
wherein said white balance correction portion comprises a  
storage unit and a plurality of multipliers wherein said  
storage unit outputs amplitude coefficients for said  
primary color video signals in accordance with said  
externally applied luminance-adjusting input, and said  
multipliers multiply said primary color video signals  
respectively by said amplitude coefficients output from  
said storage unit.

16. The display apparatus as claimed in claim 13,  
wherein said white balance correction portion comprises a  
storage unit wherein said storage unit outputs amplitude-  
adjusted primary color video signals in accordance with  
said primary color video signals and said externally  
applied luminance-adjusting input.

17. The display apparatus as claimed in claim 1,  
wherein emissions due to said primary color video signals  
are produced from phosphors of three primary colors, red,  
green, and blue.

00722621 112800

18. The display apparatus as claimed in claim 1, wherein said display apparatus is a plasma display apparatus.

5 19. A display apparatus for displaying a color image by controlling the number of emissions or the intensity thereof in accordance with primary color video signals input thereto, wherein:

10 output gray levels of images represented by said primary color video signals are adjusted in accordance with input gray levels of said images represented by said primary color video signals, thereby correcting white balance which varies with the number of emissions for, or the intensities of, said primary color video signals.

15 20. The display apparatus as claimed in claim 19, further comprising:

a first detection portion detecting the input gray levels of said images represented by said primary color video signals; and

20 a correction portion correcting said white balance by adjusting the output gray levels of said primary color video signals in accordance with said detected input gray levels.

25 21. The display apparatus as claimed in claim 20, wherein said white balance correction portion comprises a computing unit and a plurality of correction units wherein said computing unit computes gray level correction coefficients in accordance with said detected input gray levels, and said correction units apply  
30 corrections to said input gray levels by using said computed correction coefficients.

35 22. The display apparatus as claimed in claim 20, wherein said white balance correction portion comprises a storage unit and a plurality of correction units wherein said storage unit outputs gray level correction coefficients in accordance with said detected input gray levels, and said correction units apply corrections to

09722521-14800



5        said white balance, which varies with  
the number of emissions for, or the intensities of, said  
primary color video signals, is corrected by adjusting  
the amplitudes of said primary color video signals in  
accordance with said controlled number of emissions or  
said controlled intensity.

28. The white balance correction circuit as claimed  
in claim 26, further comprising:

10        a storage unit storing amplitude  
coefficients for said primary color video signals, and  
outputting said amplitude coefficients in accordance with  
said number of emissions or said intensity; and

15        a plurality of multipliers multiplying  
said primary color video signals respectively by said  
output amplitude coefficients wherein:

20        said white balance, which varies with  
the number of emissions for, or the intensities of, said  
primary color video signals, is corrected by adjusting  
the amplitudes of said primary color video signals in  
accordance with said controlled number of emissions or  
said controlled intensity.

29. The white balance correction circuit as claimed  
in claim 26, further comprising:

25        a computing unit computing amplitude  
coefficients for said primary color video signals in  
accordance with said number of emissions or said  
intensity; and wherein:

30        said white balance, which varies with  
the number of emissions for or the intensities of said  
primary color video signals, is corrected by adjusting  
the amplitudes of said primary color video signals in  
accordance with said controlled number of emissions or  
said controlled intensity.

35        30. The white balance correction circuit as claimed  
in claim 26, further comprising:

      a storage unit storing amplitude-adjusted  
primary color video signals, and outputting said

003722631 11300

amplitude coefficients in accordance with said primary color video signals and said number of emissions or said intensity; and wherein:

5                   said white balance, which varies with the number of emissions for or the intensities of said primary color video signals, is corrected by adjusting the amplitudes of said primary color video signals in accordance with said controlled number of emissions or said controlled intensity.

10           31. The white balance correction circuit as claimed in claim 26, wherein said detection portion detects said number of emissions or said intensity from a display ratio of an image produced by said primary color video signals.

15           32. The white balance correction circuit as claimed in claim 26, wherein said detection portion detects said number of emissions or said intensity from a display current that flows when displaying an image in accordance with said primary color video signals.

20           33. The white balance correction circuit as claimed in claim 26, wherein said detection portion detects said number of emissions or said intensity from an externally applied luminance-adjusting input.

25           34. A white balance correction circuit for use in a display apparatus which displays a color image by controlling the number of emissions or the intensity thereof in accordance with primary color video signals input thereto, and which includes a detection portion detecting said number of emissions or said intensity, 30 wherein output gray levels of images represented by said primary color video signals are adjusted in accordance with input gray levels of said images represented by said primary color video signals, thereby correcting white balance which varies with the number of emissions for or 35 the intensities of said primary color video signals.

          35. The white balance correction circuit as claimed in claim 34, further comprising:

0972621 11800

a first detection portion detecting the input gray levels of said images represented by said primary color video signals; and

36. The white balance correction/circuit as claimed in claim 35, further comprising:

a plurality of correcting units for applying corrections to said input gray levels by using said computed correction coefficients.

a storage unit outputting gray level correction coefficients in accordance with said detected input gray levels; and

a plurality of correcting units for applying corrections to said input gray levels by using said output correction coefficients.

38. The white balance correction circuit as claimed in claim 35, further comprising:

a second detection portion detecting a display ratio or display current of an image produced by said primary color video signals; and

a control portion controlling the number of emissions for, or the intensities of, said primary color video signals in accordance with said detected display ratio or said detected display current.

39. A white balance correction method for a display apparatus which displays a color image by controlling luminance in accordance with primary color video signals input thereto, wherein an amplitude ratio between said primary color video signals is set in accordance with the



luminances of said primary color video signals, thereby suppressing variation of white balance with said luminances.

40. A white balance correction method for a display apparatus which displays a color image by controlling the number of emissions or the intensity thereof in accordance with primary color video signals input thereto, wherein:

46. The white balance correction method/as claimed in claim 45, further comprising the step of controlling the number of emissions for, or the intensities of, said primary color video signals in accordance with said externally applied luminance-adjusting input.

47. A white balance correction method for a display apparatus which displays a color image by controlling the number of emissions or the intensity thereof in accordance with primary color video signals input thereto, wherein output gray levels of images represented by said primary color video signals are adjusted in accordance with input gray levels of said images represented by said primary color video signals, thereby correcting white balance which varies with the number of emissions for, or the intensities of, said primary color video signals.

48. The white balance/correction method as claimed in claim 47, further comprising the steps of:

detecting the input gray levels of said  
images represented by said primary color video signals;  
and

adjusting the output gray levels of said primary color video signals in accordance with said detected input gray levels.

49. The white/balance correction method as claimed in claim 47, further comprising the step of controlling the number of emissions for, or the intensities of, said primary color video signals in accordance with a display ratio or display/current of said image.

50. A white balance correction method for a display apparatus which displays a color image by controlling luminance in accordance with primary color video signals input thereto, wherein an amplitude ratio between said primary color video signals is set in accordance with the luminances of said primary color video signals, thereby suppressing variation of white balance with said luminances.

51. The white balance correction method as claimed in claim 50, wherein the luminances of said primary color video signals are defined by the number of emissions for, or the intensities of, said primary color video signals.

5 52. The white balance correction method as claimed in claim 50, wherein a color image is displayed by means of light-emitting elements in accordance with luminance-defined primary color video signals.

10 53. A white balance correction circuit for use in a display apparatus which displays a color image using primary color video signals, comprising:

an adjusting unit adjusting the amplitude of each of said primary color video signals;

15 a storage unit storing an amplitude ratios for correcting the amplitudes of said primary color video signals; and

a setting unit setting in said adjusting unit amplitude ratios stored in said storage unit wherein:

20 the amplitude ratio between said primary color video signals is set in accordance with the number of emissions for, or the intensities of, said primary color video signals, thereby correcting white balance which varies with the number of emissions for, or  
25 the intensities of, said primary color video signals.

54. A white balance correction circuit for use in a display apparatus which displays a color image using primary color video signals, comprising:

30 an adjusting unit adjusting the amplitude of each of said primary color video signals;

a computing unit computing an amplitude ratio for each of said primary color video signals from the number of emissions for, or the intensities of, said primary color video signals; and

35 a setting unit setting in said adjusting unit the amplitude ratio computed by said computing unit wherein:

09722524 112300

the amplitude ratio between said  
primary color video signals is set in accordance with the  
number of emissions for, or the intensities of, said  
primary color video signals, thereby correcting white  
5 balance which varies with the number of emissions for, or  
the intensities of, said primary color video signals.

09722621 112300